Addressing Usability and UX in Call for Tender for IT Products

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Introduction

- The economic benefits of usability evaluation are well documented in the literature

- The research in HCI has little impact on software development practice

- Our research is focused on methods for addressing usability and user experience in software development processes
The experimental study

- **Goals**
  - To analyze if and how software companies consider HCD in their software development processes
  - To investigate how software companies can improve their development process in order to create better products

### Step 1
**Questionnaire-based survey**
- **Planning**
  - Company selection
  - Online questionnaire design
- **Data Collection**
  - Online questionnaires in Italy and Denmark
- **Analysis & Results**
  - Qualitative analysis
  - Quantitative analysis

### Step 2
**Interviews**
- **Planning**
  - Interviewees selection
  - Interview organization
- **Data Collection**
  - Four interviews
- **Analysis & Results**
  - Transcript
  - Grounded Analysis

### Step 3
**Focus groups**
- **Planning**
  - Participant selection
  - Discussion topics definition
- **Data Collection**
  - Focus group with four participants and three moderators
- **Analysis & Results**
  - Transcript
  - Content analysis

### Step 4
**Exploratory study**
- **Planning**
  - Companies selection
  - Study design
- **Data Collection**
  - Cooperative Method Development
    - Two final interviews
- **Analysis & Results**
  - Transcript
  - Content analysis
  - Notes
Main results

- Too many companies overlook important quality factors, such as usability and UX
  - Poor knowledge about usability evaluation
  - Problems in introducing and performing usability evaluation
  - Most practitioners are reluctant to involve users in participatory design activities as well as in evaluation
    - Users are unable to explain their needs or expectations
    - Users are unable to provide useful indications during the evaluation
  - Usability and UX are not considered in the Call for Tenders (CFTs)
    - The contracting company is not motivated to consider these product qualities
      
      “I do not burden myself with anything not explicitly required”
Usability requirements in CfT

- 44 CfTs for IT products were analysed
  - 26 Italian CfTs
  - 18 European CfTs

![Pie chart showing distribution of usability requirements across categories:]
- Category 1: 7%
- Category 2: 48%
- Category 3: 7%
- Category 4: 11%
- Category 5: 27%

- Category 1: usability as ISO 9126-9241 quality attribute
- Category 2: usability vaguely mentioned
- Category 3: usability evaluated through formal tests
- Category 4: usability and accessibility mentioned together
- Category 5: no reference to usability
Online questionnaire on usability in CfTs

Goal: To collect practitioners’ opinion about usability requirements in CfTs

- to check the presence of usability requirements in CfTs
- to collect information on metrics and guidelines possibly specified in CfTs
- to know the respondents’ opinion about advantages/disadvantages of including usability requirements in CfTs
Results: Respondents’ profile

- 54 professionals and/or experts in the ICT sector
- 38 respondents claimed that they had read at least once a CfT
Presence of usability requirements in CfTs

% of participants

Rarely

Never

Often

Always

Bar chart showing the percentage of participants indicating the frequency of usability requirements in CfTs.
Discussion and suggestions

What can we do to successfully integrate usability evaluation in software development processes?

- Researchers and practitioners should collaborate together in order to improve the development processes
  - How to foster collaboration?

- Identify formal and objectively verifiable requirements to be included in the Call for Tenders

- Convince public/private organizations to explicitly mention usability and UX requirements in the Calls for Tenders for ICT products
GLU
(Gruppo di Lavoro per l’Usabilità)

- Working group of the Italian Ministry of Public Administration
  - It is working on the improvement of the usability of Public Administration websites and other e-government systems

- eGLU Protocol 2.0
  - To guide web masters and web editors in the usability evaluation of the websites they work on, also committing very few resources in terms of time and people

- HCD in CfTs
  - A framework to guide the specification in CFTs of different HCD techniques (e.g., personas, scenarios, interviews, questionnaires, user tests) depending on the complexity of the system to be developed
Thanks!

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